

## CLEAN VERSION OF AMENDMENTS

1. A tagging-free method to detect binding of molecules, comprising the steps of:

(A) providing a sensor comprised of a first layer and a second layer wherein said first layer comprises a single stranded nucleic acid sequence and wherein said second layer comprises a photoluminescent material;

(B) exposing said sensor to a biological sample for sufficient time for said single stranded nucleic acid sequence to bind to a material of interest in said biological sample;

(C) applying light to said sensor; and

(D) measuring photoluminescence from said sensor, wherein photoluminescence measured in said step of exposing is indicative of binding of molecules.

3. The tagging-free method of Claim 1 wherein said second layer comprises material selected from the group consisting of aromatic polymers, doped or undoped metal oxides, sulfides, selenides, arsenides, tellurides, and nitride and phosphide nanocomposites.

11. The tagging-free method of claim 1, wherein said light is applied to said first layer of said sensor, and said light is ultraviolet light with wavelength in the range of 200-700nm.

12. The tagging-free method of claim 11, wherein the wavelength of the ultraviolet light is in the range of 260-265 nm.

20. The tagging-free method of claim 1, wherein said first layer comprises a plurality of sections each of which comprises a different nucleic acid sequence.